UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,497	11/19/2003	Alok Kumar	10559-875001 / P17394	8237

26985   7590   08/21/2008
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EXAMINER
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ART UNIT	PAPER NUMBER
2194	

MAIL DATE	DELIVERY MODE
08/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/718,497	KUMAR ET AL.
	Examiner	Art Unit	
	VAN H. NGUYEN	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>14 May 2008</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-15,27-32,42 and 43</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-11,15, 27-32,42 and 43</u> is/are rejected.

7) ☒ Claim(s) <u>12-14</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
            application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail. Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to the amendment filed 05/14/2008.

Claims 1-15, 27-32, 42, and 43 are presented for examination.

Applicant is required to cancel non-elected claims 16-26, 33-41, and 44-51 in the next

response to this office action.

Claim Objections

2.   Claim 9 is objected to because of the following minor informalities:

   "a event context" should read *"the event context"*.

   Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15, 27-32, 42, and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1:

- The term "events" (line 6) renders the claim indefinite. It is not clear if it is referring to "receiving events" or "arriving events".

- The term "the events" (line 9) renders the claim indefinite. It is not clear if it is referring to "receiving events" or "arriving events".

As to claim 2:

The term "execution context" renders the claim indefinite. It is not clear if it is referring to "the execution context" of claim 1.

As to claim 6:

The term "the system" lacks antecedent basis.

As to claim 8:

The term "the packet" lacks antecedent basis.

As to claim 9:

The term "the event" lacks antecedent basis.

As to claims 12 and 13:

The term "an event" renders the claims indefinite. It is not clear if it is referring to "the event" of claim 11.

As to claim 14:

The term "the queue" lacks antecedent basis.

As to claim 27:

The term "events" (lines 4 and 5) renders the claims indefinite. It is not clear if it is referring to "events" recited at line 3.

As to claim 29:

The term "the packet" lacks antecedent basis.

As to claim 30:

The term "the event" lacks antecedent basis.

As to claim 31:

The term "the event queue" lacks antecedent basis.

As to claim 32:

The term "the event" lacks antecedent basis.

As to claim 42:

- The term "events" (line 7) renders the claims indefinite. It is not clear if it is

  referring to "events" recited at line 6.

- The term "the context queues" lacks antecedent basis.

As to claim 42:

- The term "the global FIFO queue" lacks antecedent basis.

- The term "the system" lacks antecedent basis.

Dependent claims are rejected for fully incorporating the deficiencies of their base

claims.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

Claims 1-11, 15, 27-32, 42, and 43 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Blumrich et al.** (US 20040103218 A1) in view of **Wipfel et al.** (US

6151688 A).

As to claims 1, 27, and 42:

Blumrich teaches a method, a computer program product, and an apparatus comprising:

dynamically binding an event context to an execution context in response to receiving

events by: storing arriving events into an event queue that is accessible by event

contexts; and associating an event queue with the execution context to temporarily store

the events for the event context for a duration of the dynamic binding (see ¶¶ 0100 and

0110-0128).

Blumrich, however, does not specifically teach the use of the global event queue as

claimed.

Wipfel teaches the use of the global event queue (see col.15, line 3-col.16, line 17).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Blumrich with Wipfel because it would have provided the capability for optimizing massively parallel computing at teraOPS-scale at decreased cost, power and footprint.

As to claim 2:

Blumrich teaches execution context can be in one of four states, idle, binding, bound, or unbinding binding (see ¶¶ 0110-0128).

As to claim 3:

Blumrich teaches in the bound state, an execution context is bound to a specific event context and the execution context processes events for that event context and the event queue associated with that execution context is used to store events for the event context to which it is bound (see ¶¶ 0110-0128).

As to claim 4:

Blumrich teaches in the unbinding state, the execution context determines if it has any more events to process for the event context to which it was bound and either unbinds

itself from the event context, going to idle state or begins processing another event from

that context, going back to bound state (see ¶¶ 0110-0128).

As to claim 5:

Blumrich teaches in the event context can be in one of two states, unbound or bound (see

¶¶ 0110-0128).

As to claims 6 and 43:

Wipfel teaches the global FIFO event queue is used to queue events when the events first

arrive into the system (see col.15, line 3-col.16, line 17).

As to claims 7 and 28:

Wipfel teaches maintaining execution contexts in an idle state until an event arrives at a

head of the global event queue (see col.15, line 3-col.16, line 17).

As to claims 8 and 29:

Blumrich teaches assigning an execution context that is in idle state to process the packet

(see ¶¶ 0110-0128).

As to claims 9 and 30:

Blumrich teaches removing the event from the event queue; determining a event context; and determining if the event context to which this packet belongs is already bound to an execution context (see ¶¶ 0110-0128).

As to claims 10 and 31:

Blumrich teaches if the event context is already bound, binding an execution further comprises placing the packet in the event queue of the other execution context to which the event context associated with the packet is already bound to; unbinding the event context; and returning to an idle state (see ¶¶ 0110-0128).

As to claims 11 and 32:

Blumrich teaches if the event context is not already bound, binding an execution further comprises binding the execution context to that event context by updating a state of the execution context from idle to bound, updating the state of the event context from "not bound" to bound, and recording that this execution context is bound to this event context; and processing the event (see ¶¶ 0110-0128).

As to claim 15:

Blumrich teaches the events are packets (see ¶¶ 0110-0128).

Indication of Allowable Subject Matter

5.   Claims 12-15 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims. Claims 12-15 are also the objections and subject to a

final search.

Response to Arguments

6.   Applicant's arguments regarding claims 1-15, 27-32, 42, and 43 are persuasive.

However, new grounds of rejection are set forth in the Office Action.

Conclusion

7.   The prior art made of record, see PTO 892, and not relied upon is considered pertinent to

applicant's disclosure. Applicant should review these references carefully before

responding to this office action.

Contact Information

8.   Any inquiry or a general nature or relating to the status of this application should
      be directed to the TC 2100 Group receptionist: (571) 272-2100.

      Any inquiry concerning this communication or earlier communications from the
      examiner should be directed to VAN H. NGUYEN whose telephone number is (571)
      272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM
      6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's
      supervisor, MENG-AI AN can be reached at (571) 272-3756.

      The fax phone number for the organization where this application or proceeding is
      assigned is (571) 273-8300.

      Information regarding the status of an application may be obtained from the Patent
      Application Information Retrieval (PAIR) system. Status information for   published
      applications may be obtained from either Private PAIR or Public PAIR. Status
      information for unpublished applications is available through Private PAIR only. For
      more information about the PAIR system, see http://pair-direct.uspto.gov. Should you
      have questions on access to the Private PAIR system, contact the Electronic
      Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
      USPTO Customer Service Representative or access to the automated information system,
      call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

                                                /VAN H NGUYEN/
                                                Primary Examiner, Art Unit 2194